

Joint Evolution of Ω_x and Ω_y During a Time Period t

$$\cos(\Omega_x t) \cos(\Omega_y t) = \cos[(\Omega_x + \Omega_y) t] + \cos[(\Omega_x - \Omega_y) t] \quad \text{Data Set (1)}$$

$$\cos(\Omega_x t) \sin(\Omega_y t) = \sin[(\Omega_x + \Omega_y) t] - \sin[(\Omega_x - \Omega_y) t] \quad \text{Data Set (2)}$$

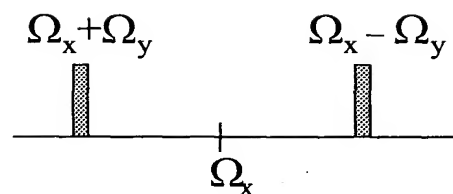
$$\sin(\Omega_x t) \cos(\Omega_y t) = \sin[(\Omega_x + \Omega_y) t] + \sin[(\Omega_x - \Omega_y) t] \quad \text{Data Set (3)}$$

$$\sin(\Omega_x t) \sin(\Omega_y t) = -\cos[(\Omega_x + \Omega_y) t] + \cos[(\Omega_x - \Omega_y) t] \quad \text{Data Set (4)}$$

- (A) Quadrature detection of peaks forming the in-phase peak pair in cosine-modulated RD NMR

$$\cos[(\Omega_x + \Omega_y) t] + \cos[(\Omega_x - \Omega_y) t] \quad (1)$$

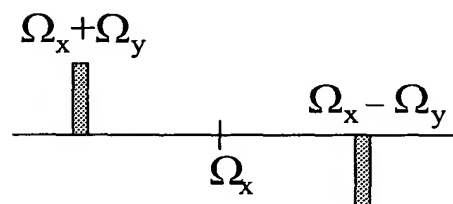
$$\sin[(\Omega_x + \Omega_y) t] + \sin[(\Omega_x - \Omega_y) t] \quad (3)$$



- (B) Quadrature detection of peaks forming the anti-phase peak pair in sine-modulated RD NMR

$$\cos[(\Omega_x + \Omega_y) t] - \cos[(\Omega_x - \Omega_y) t] \quad - (4)$$

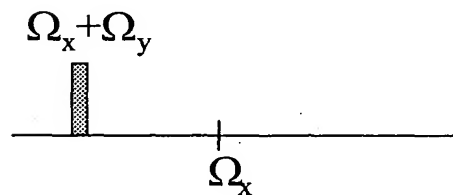
$$\sin[(\Omega_x + \Omega_y) t] - \sin[(\Omega_x - \Omega_y) t] \quad (2)$$



- (C) Edited, phase sensitive detection of the peak encoding the sum of the two chemical shifts, $\Omega_x + \Omega_y$

$$\cos[(\Omega_x + \Omega_y) t] \quad (1) - (4)$$

$$\sin[(\Omega_x + \Omega_y) t] \quad (3) + (2)$$



- (D) Edited, phase sensitive detection of the peak encoding the difference of the two chemical shifts, $\Omega_x - \Omega_y$

$$\cos[(\Omega_x - \Omega_y) t] \quad (1) + (4)$$

$$\sin[(\Omega_x - \Omega_y) t] \quad (3) - (2)$$

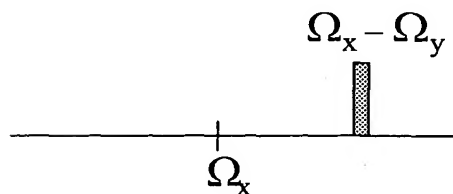
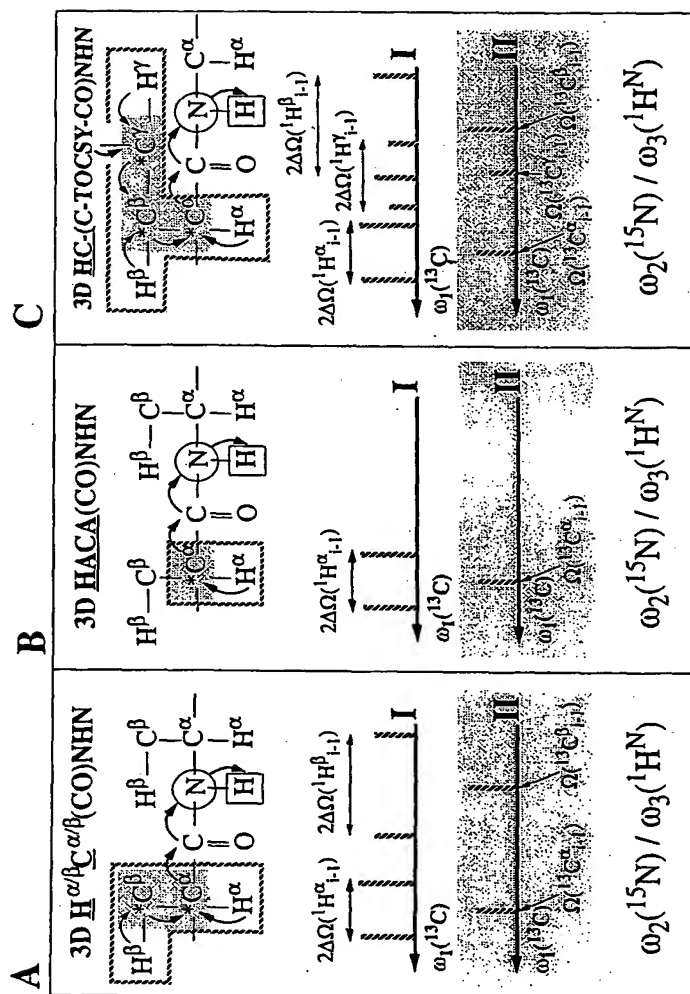
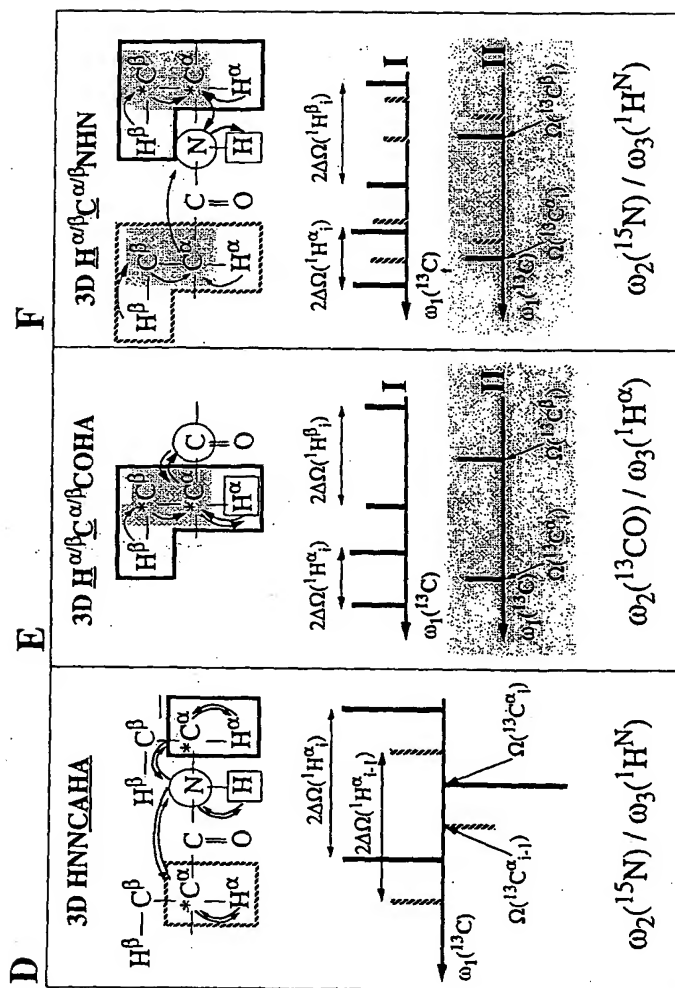


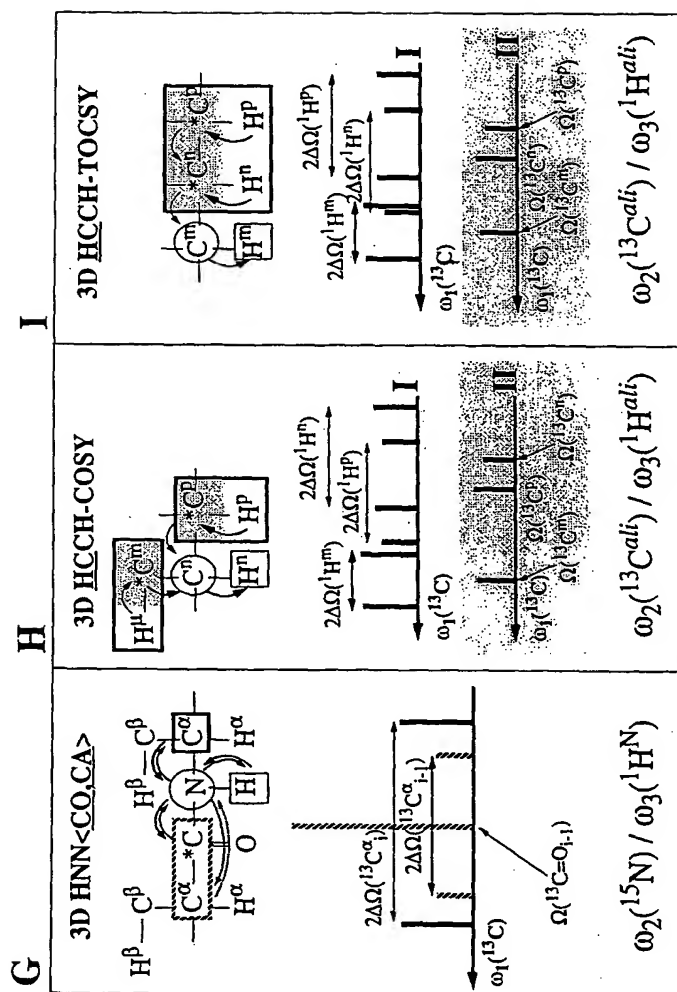
FIGURE 1



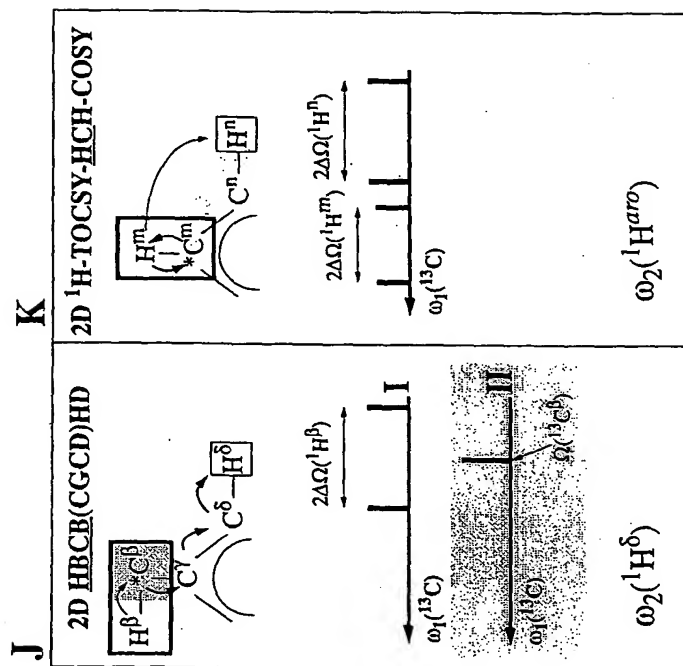
FIGURES 2A-C



FIGURES 2D-F



FIGURES 2G-I



FIGURES 2J-K

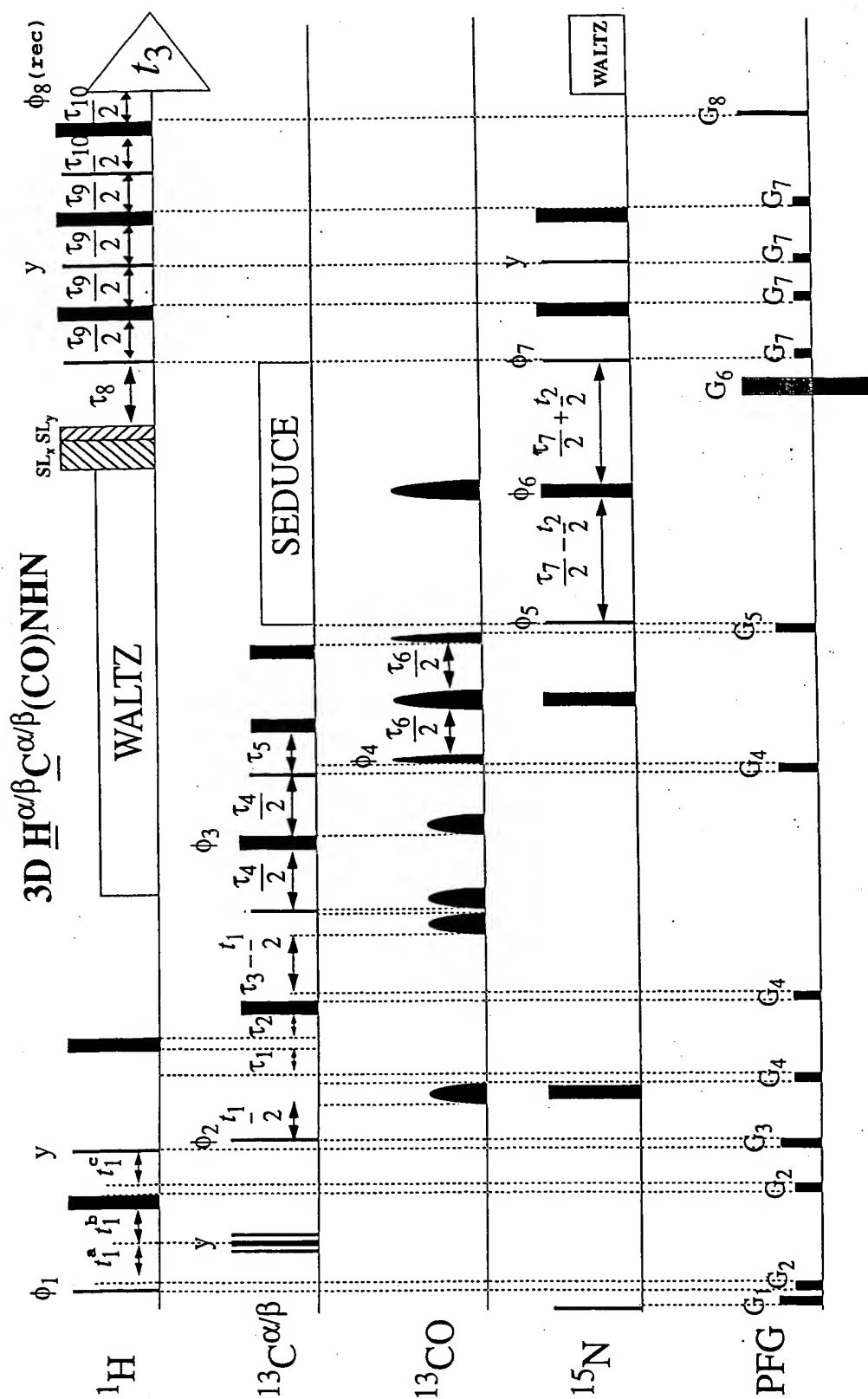


FIGURE 3A

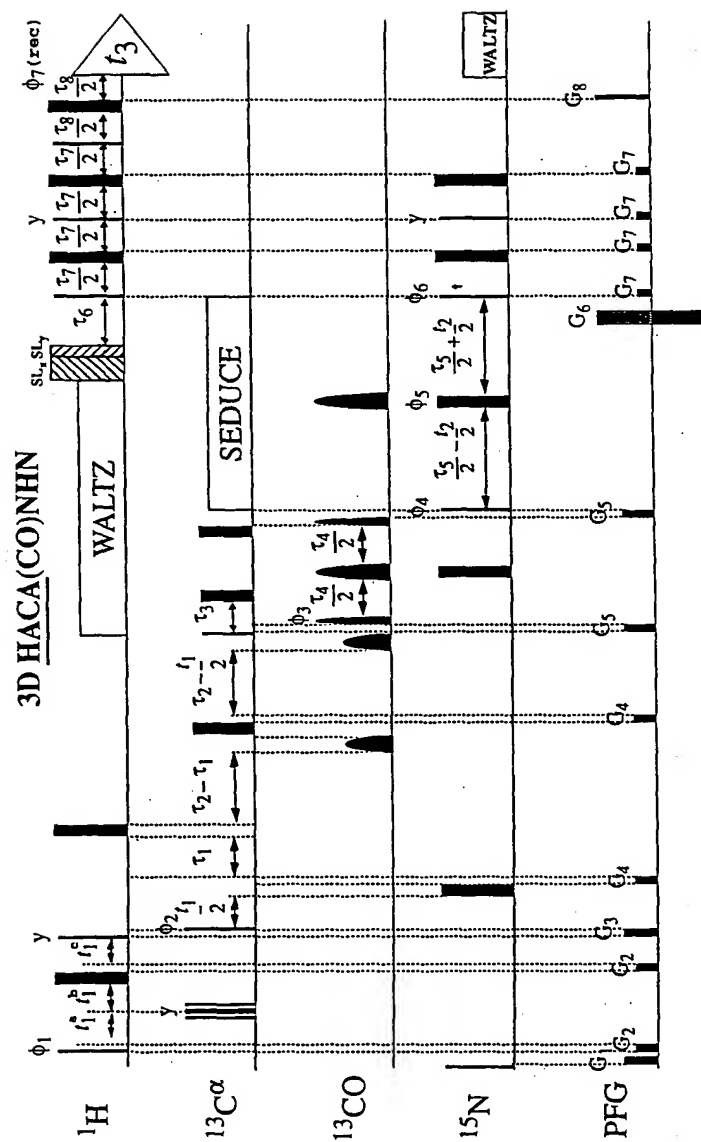


FIGURE 3B

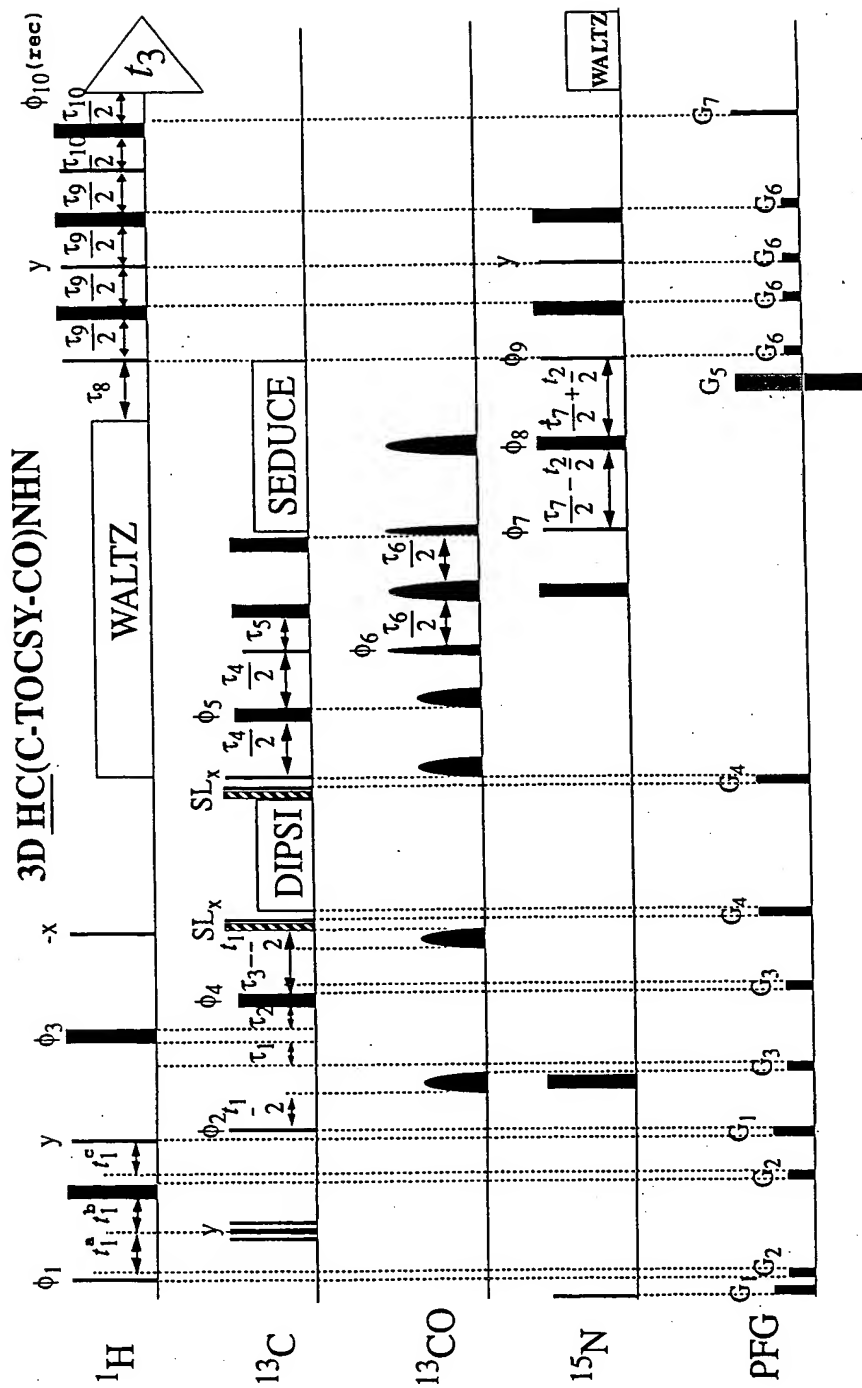


FIGURE 3C

3D HNNCAHA

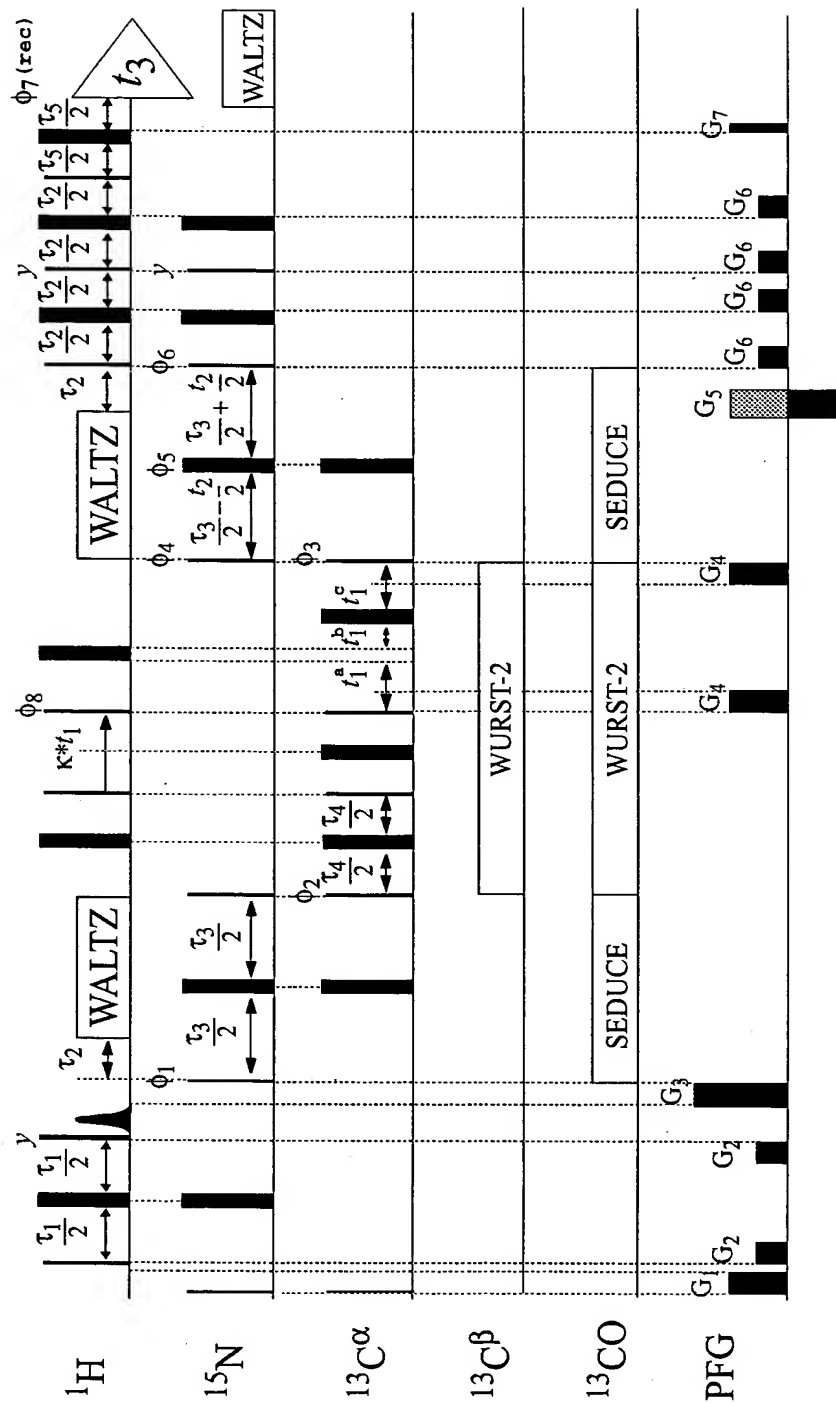


FIGURE 3D

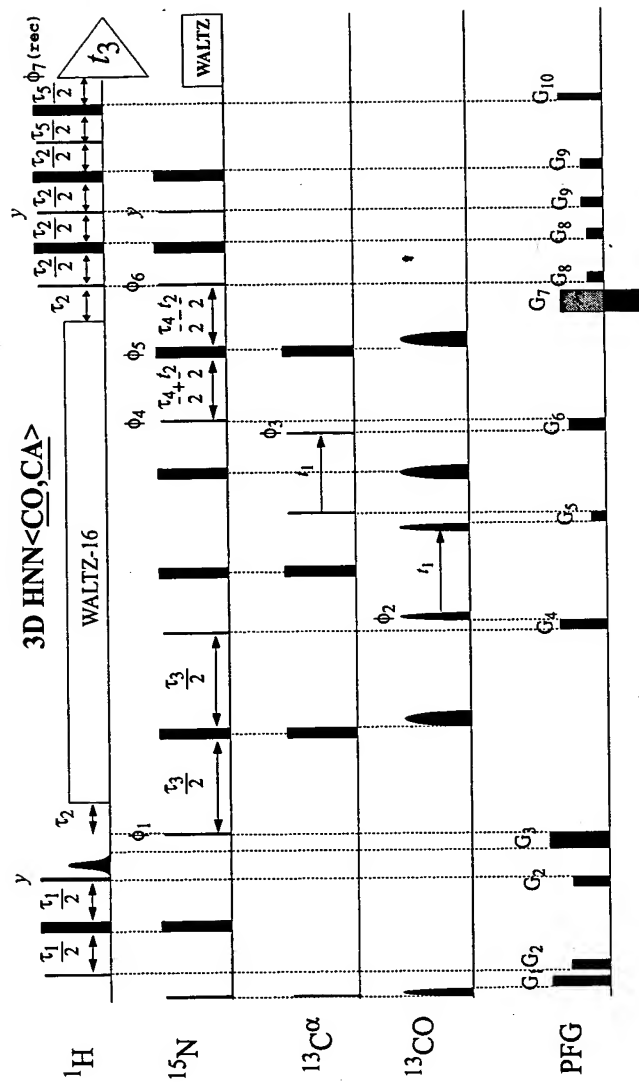


FIGURE 3G





FIGURE 3I

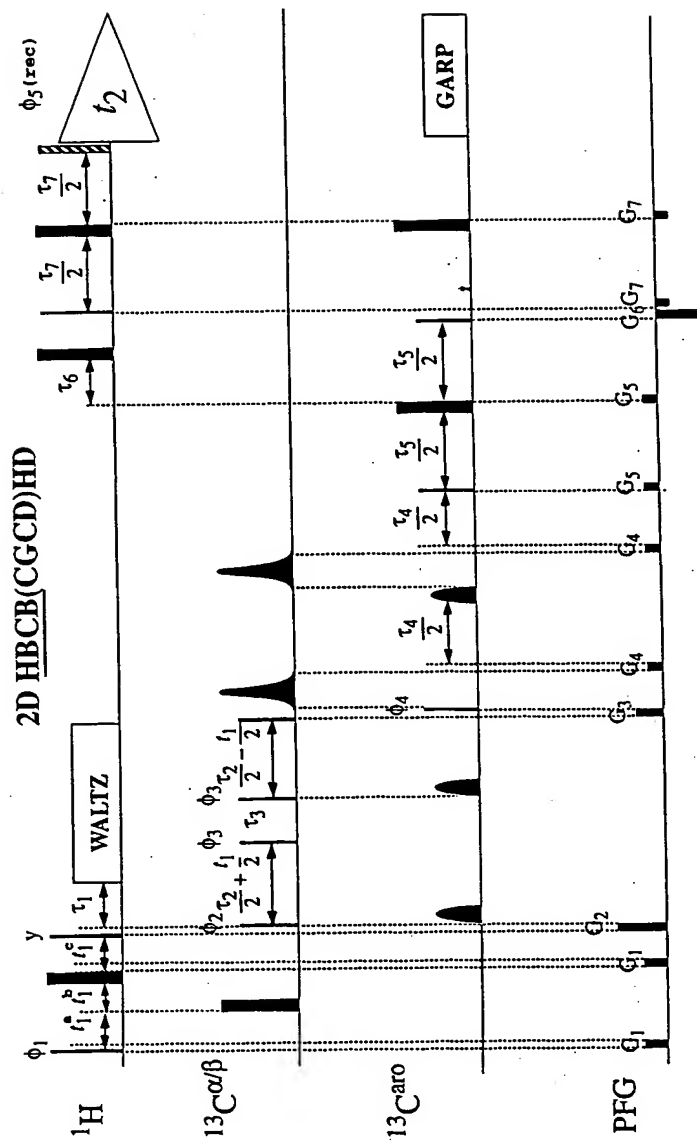


FIGURE 3J

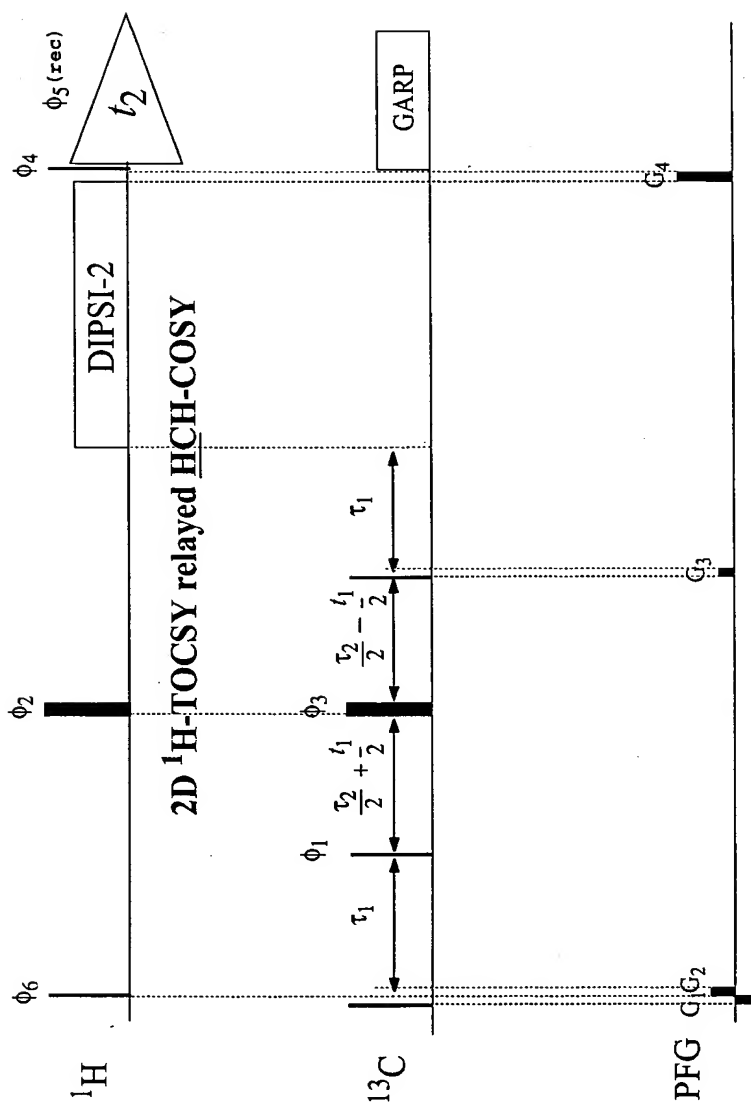


FIGURE 3K

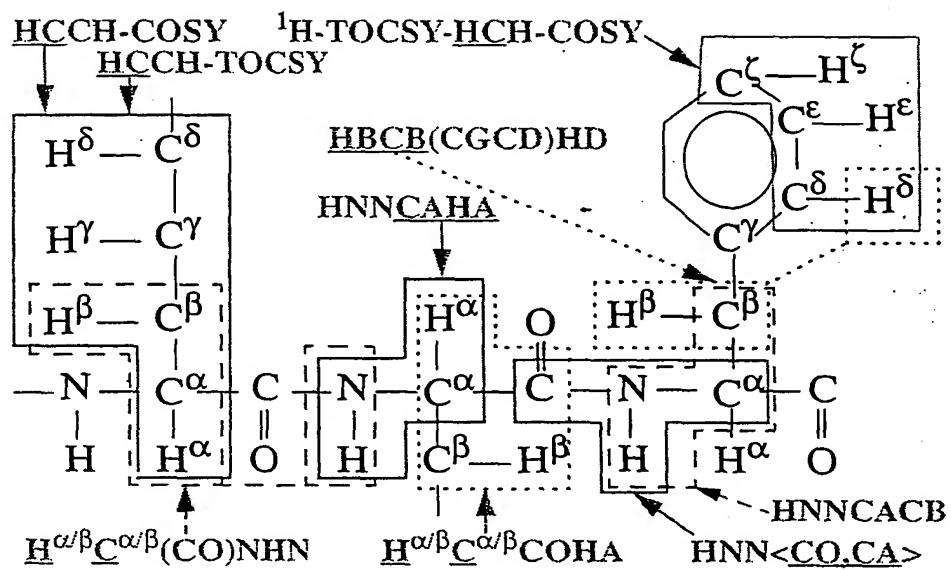


FIGURE 4

3D HACA(CO)NHN

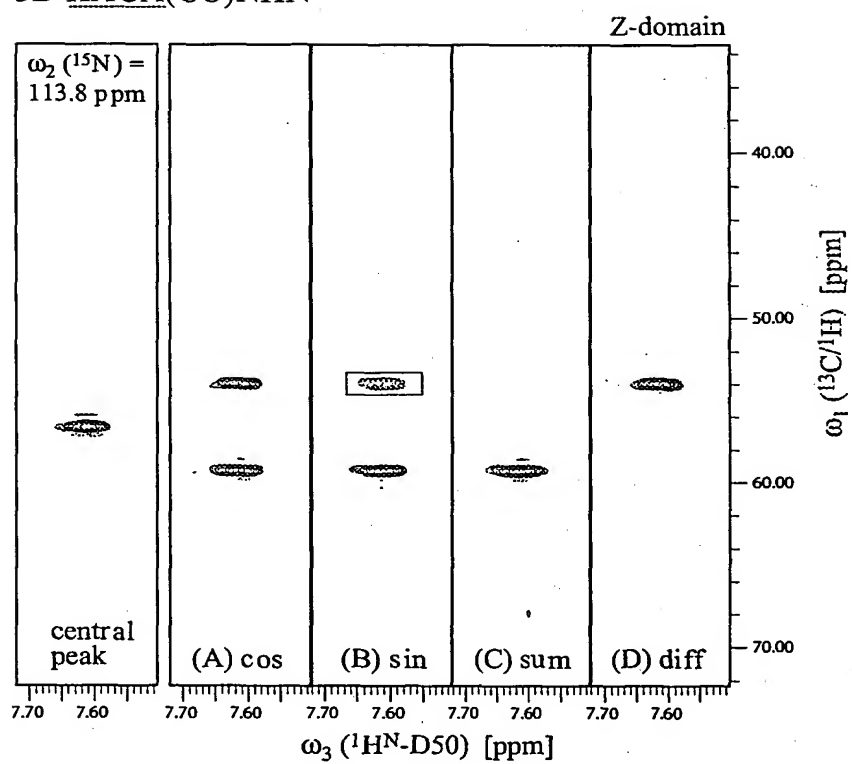


FIGURE 5

3D HNNCAHA

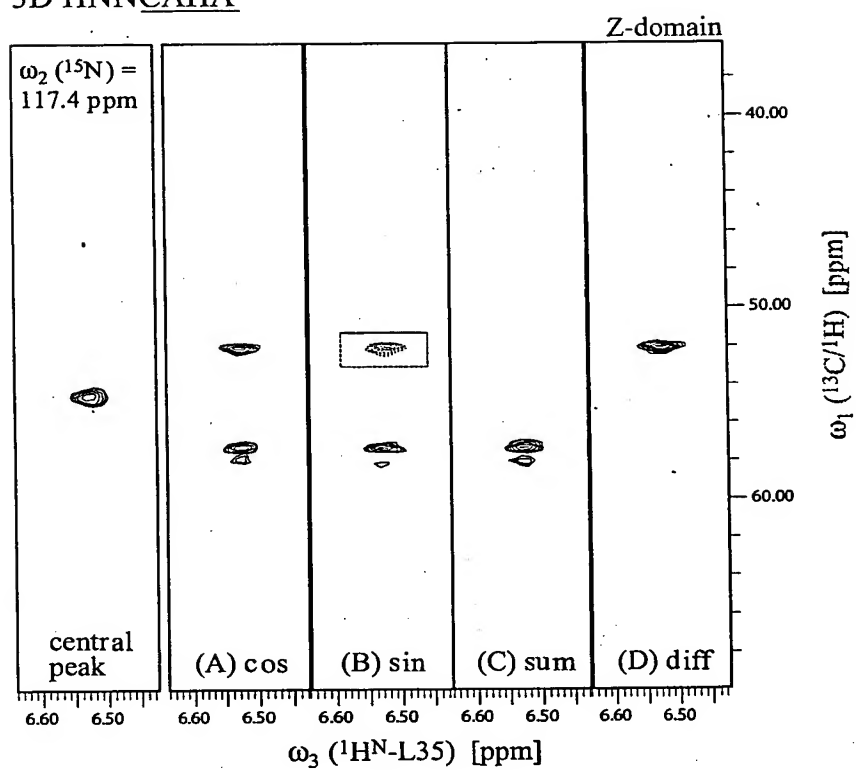


FIGURE 6

3D $\underline{H}\alpha/\beta \underline{C}\alpha/\beta(\text{CO})\text{NHN}$

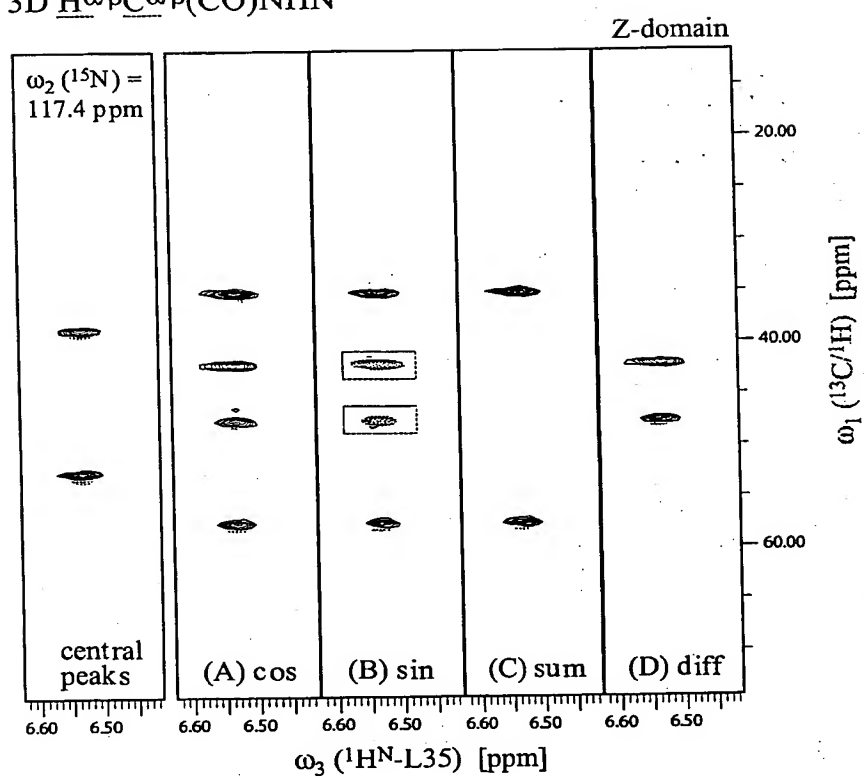


FIGURE 7

3D $\underline{H}\alpha\underline{\beta}\underline{C}\alpha\underline{\beta}\underline{N}\underline{H}\underline{N}$

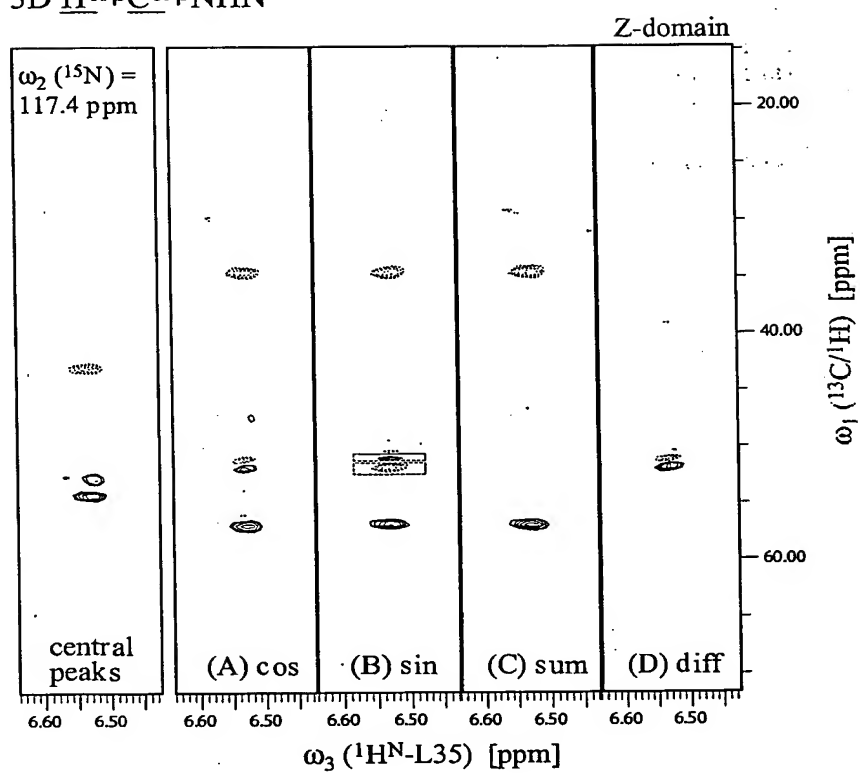


FIGURE 8

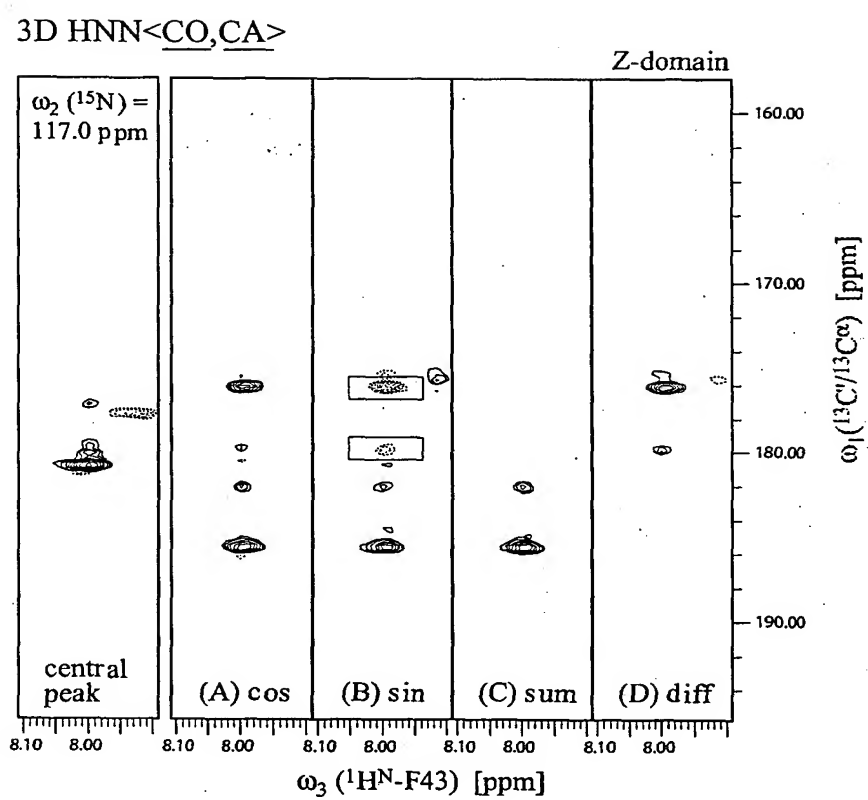


FIGURE 9

3D $\underline{\text{HC}}(\text{C-TOCSY-CO})\text{NHN}$

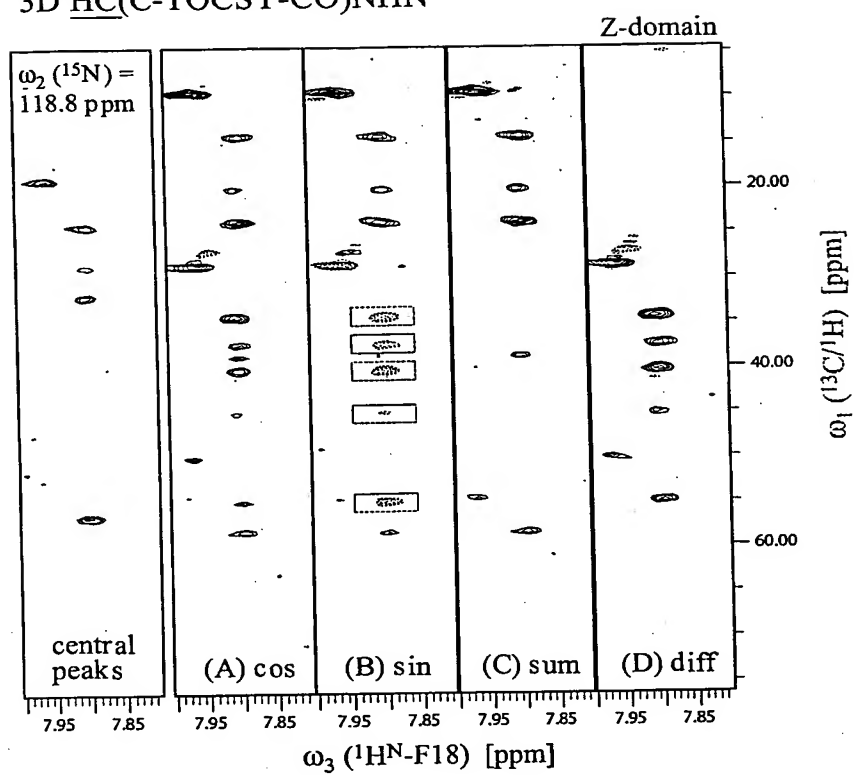


FIGURE 10

3D HCCH-COSY

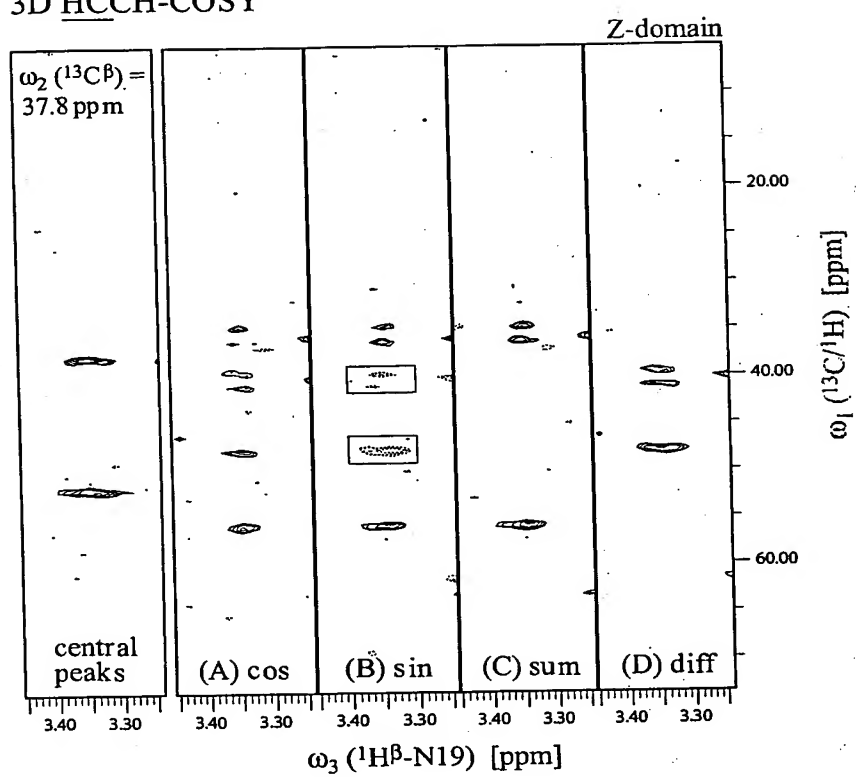


FIGURE 11

3D HCCH-TOCSY

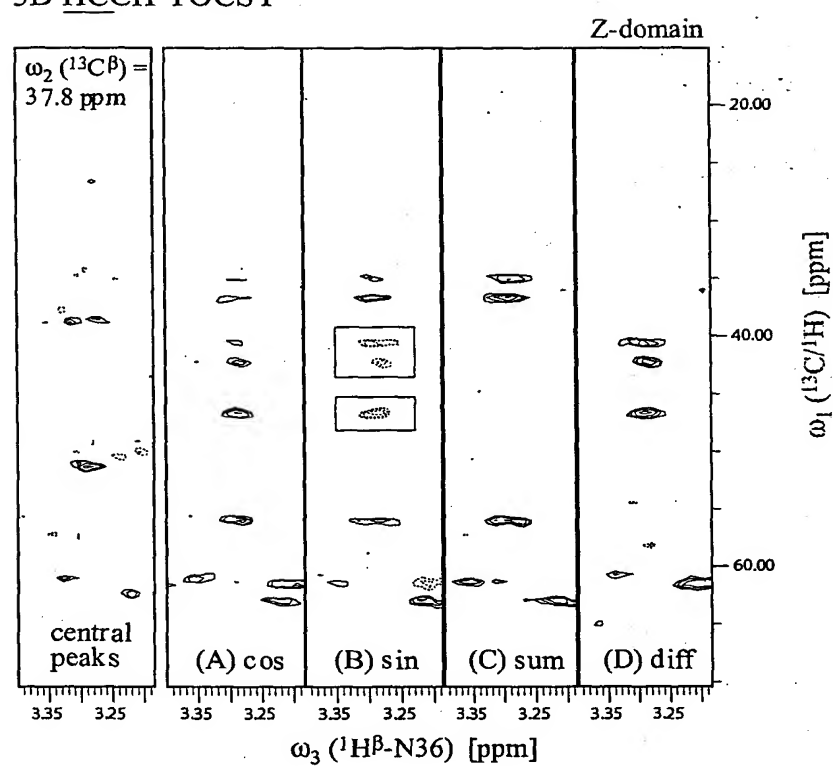


FIGURE 12

2D HBCB(CGCD)HD

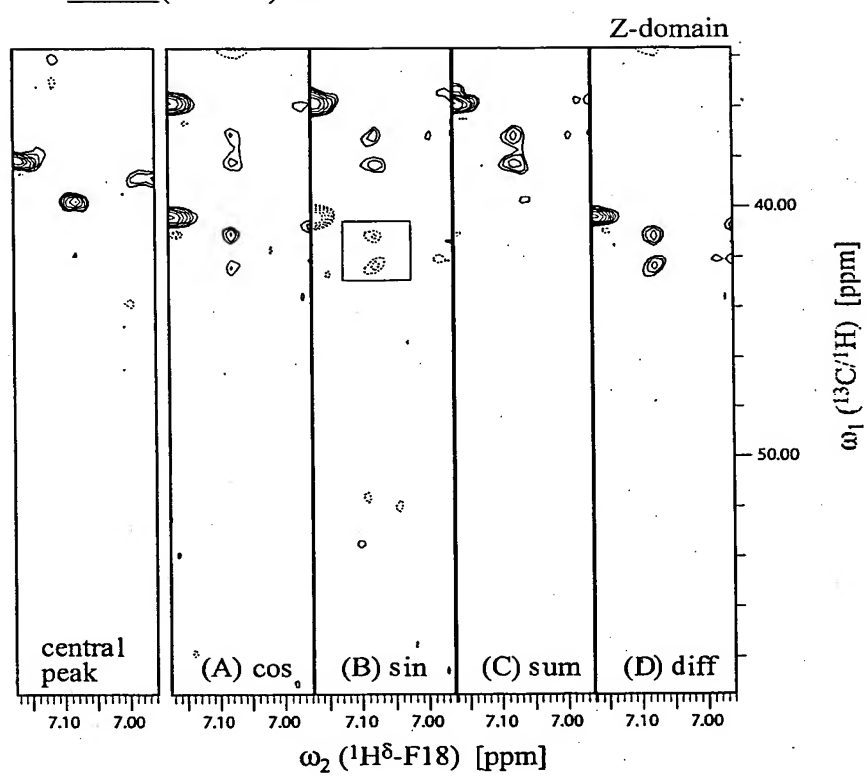


FIGURE 13

3D $\underline{H\alpha\beta C\alpha\beta COHA}$

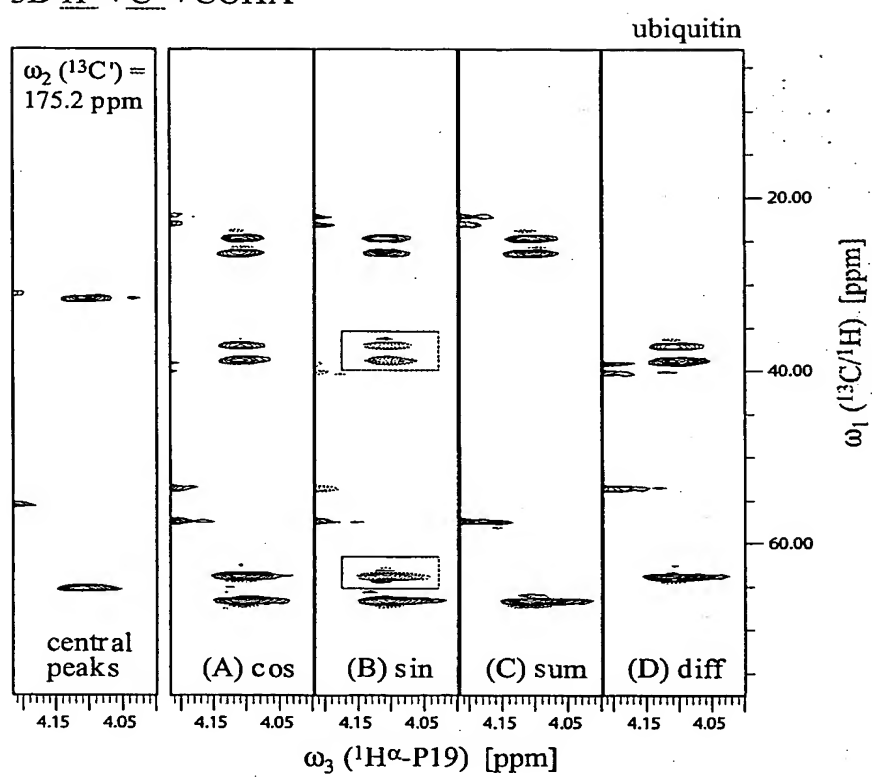


FIGURE 14

2D H-TOCSY-HCH-COSY

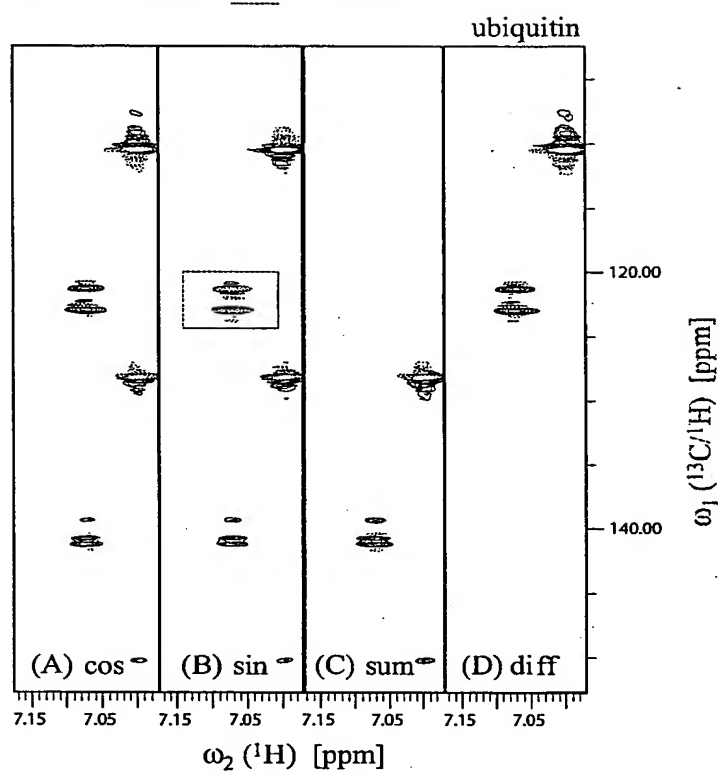


FIGURE 15